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Claims

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13. (New) A computer-based software method for creating and modifying a nested data base, comprising the steps of:

5 (a) creating a multiplicity of component packets, each of which is further associated with a key and is indexed by a keyed search structure, each such component packet further comprising one or more components, wherein the components further comprise:

(i) a plurality of component data records, wherein each component  
10 data record further comprises an entry point of the keyed search structure;

(ii) a plurality of component description records arranged in an array, each component description record further comprising a component identifier which is unique within the component packet's  
15 component description records, and which further comprises:

(ii1) a size field;

(ii2) a logical block number field;

(ii3) a component packet offset; and

(ii4) a header record, which further comprises a total size field and  
20 a number of components field;

(b) transferring one or more of the data records from an applications program to the database;

(c) transferring one or more of the data records from the database to the applications program;

25 (d) adding a new component;

(e) modifying an existing component by changing the component data record without changing component size;

(f) modifying an existing component by increasing or decreasing its size; and

5 (g) deleting an existing component packet.

14. (NEW) The method of claim 13, further comprising reading the whole nested database in a single disk access when the size of the database so permits.

15. (NEW) The method of claim 14, further comprising making  
10 additional accesses to the nested database when, and only when the size of the component data records grows past a particular size l.

16. (New) The method of claim 15, further comprising generating of an indexed/keyed collection of other component packets from one or more pre-existing component packets.

15 17. (NEW) The method of claim 14, further comprising making additional accesses to the nested structure when, and only when the number of the component data records grows past a number n.

18. (New) The method of claim 17, further comprising generating of an indexed/keyed collection of other component packets from one or  
20 more pre-existing component packets.

19. (NEW) A computer-based system for creating and modifying a nested data base, comprising:

(a) means for creating a multiplicity of component packets, each of which is further associated with a key and is indexed by a keyed

25 search structure, each such component packet further comprising one

or more components, wherein the components further comprise:

(i) a plurality of component data records, wherein each component data record further comprises an entry point of the keyed search structure;

5 (ii) a plurality of component description records arranged in an array, each component description record further comprising a component identifier which is unique within the component packet's component description records, and which further comprises:

(iil) a size field;

10 (ii2) a logical block number field;

(ii3) a component packet offset; and

(ii4) a header record, which further comprises a total size field and a number of components field;

(b) means for transferring one or more of the data records from an applications program to the database;

(c) means for transferring one or more of the data records from the database to the applications program;

(d) means for adding a new component;

(e) means for modifying an existing component by changing the component data record without changing component size;

(f) means for modifying an existing component by increasing or decreasing its size; and

(g) means for deleting an existing component packet.

20. (NEW) The system of claim 19, further comprising means for  
25 reading the whole nested database in a single disk access when the

size of the database so permits.

21. (NEW) The system of claim 20, further comprising means for making additional accesses to the nested database when, and only when the size of the component data records grows past a particular size 1.

5 22. (New) The system of claim 21, further comprising means for generating of an indexed/keyed collection of other component packets from one or more pre-existing component packets.

23. (NEW) The system of claim 20, further comprising means for making additional accesses to the nested structure when, and only when the  
10 number of the component data records grows past a number n.

24. (New) The system of claim 23, further comprising means for generating of an indexed/keyed collection of other component packets from one or more pre-existing component packets.